Pure prostatic papillary adenocarcinoma with ductal features

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PURE PROSTATIC PAPILLARY ADENOCARCINOMA WITH DUCTAL FEATURES

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Papillary adenocarcinoma resembling ductal carcinoma and arising in the peripheral zone is extremely rare. We report a case of prostatic papillary adenocarcinoma with ductal features. The patient was a 68-year-old man who initially presented with dysuria and sensation of residual urine after voiding. Prostatic needle biopsy findings supported pathological diagnosis of prostatitis. The symptoms were improved by medication for prostatitis, and prostate-specific antigen (PSA) level of 22.6 ng/ml descreased to 9.9 ng/ml. It remained between 7.2 ng/ml and 9.9 ng/ml for 2 years. However, it gradually increased to 11.9 ng/ml. Transrectal digital examination, T2-weighted magnetic resonance imaging (MRI) of the prostate and transrecral ultrasound showed a mass in the enlarged right side of the prostate. Transrectal needle biopsy of the mass was performed, and papillary adenocarcinoma was suspected by histological examination. Radical prostatectomy was performed. Histological and immunohistochemical examination of the prostatectomy specimen revealed pure prostatic papillary adenocarcinoma with ductal features.

(Hinyokika Kiyo **51** : 207–210, 2005)

Key words: Prostatic papillary adenocarcinoma, Ductal features

INTRODUCTION

Prostatic ductal carcinoma is rare and occurs mostly in the periurethral duct. Histologically, ductal carcinoma consists of cribriform or papillary pattern or mixture of the two. Papillary adenocarcinoma resembling ductal carcinoma and arising in the peripheral zone is extremely rare and usually coexists with typical acinar carcinoma. We describe a case of pure papillary adenocarcinoma with ductal features, which localized in the peripheral zone adjacent to the seminal vesicle.

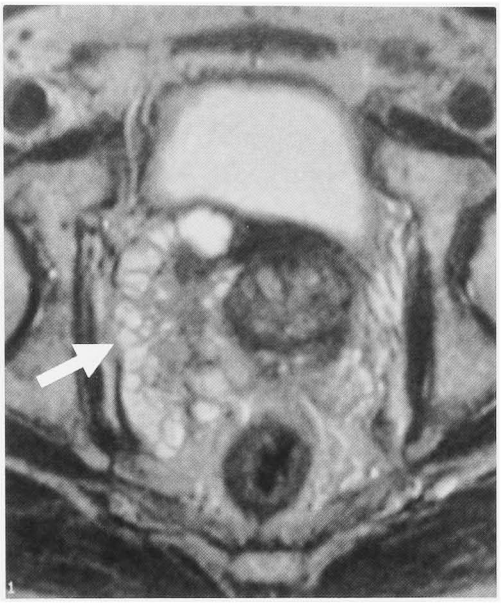
CASE REPORT

The patient was a 68-year-old man who initially presented with dysuria and sensation of residual urine after voiding. Prostatic needle biopsy findings supported pathological diagnosis of prostatitis. However, the patient was referred to our hospital with an elevated prostate-specific antigen (PSA) level of 22.6 ng/ml (normal, below 4.0 ng/ml). The symptoms were improved by medication for prostatitis, and the PSA level descreased to 9.9 ng/ml two months later. It remained between 7.2 ng/ml and 9.9 ng/ml for 2 years, and then it gradually increased to 11.9 ng/ml. Transrectal digital examination revealed a nodule on the right lobe of the prostate. T2-weighted magnetic resonance imaging (MRI) of the prostate showed a heterogeneous mass measuring 4.5×3×3.5 cm (Fig. 1). Transrectal ultrasound showed a mass in the enlarged right side of the prostate, transrectal needle biopsy of the mass was performed, and papillary adenocarcinoma was suspected by histological examination (Fig. 2). Lymph node swelling and distant metastasis were not detected by MRI, computerized tomography or bone scintigraphy. Radical prostatectomy was performed. Histological examination of the prostatectomy specimen revealed that adenocarcinoma existed only in the peripheral zone (Fig. 3) and it resembled well-differentiated papillary pattern of typical ductal carcinoma (Fig. 4). The tumor cells were immunohistochemically positive for PSA. There was no figure of typical acinar carcinoma in the tumor. Thus, the tumor was diagnosed as pure prostatic papillary adenocarcinoma with ductal features. The stage was thought to be pT3N0M0. After the prostatectomy, PSA levels were normal. At the 8-month follow-up examination, the patient was healthy and without evidence of recurrence or metastasis.

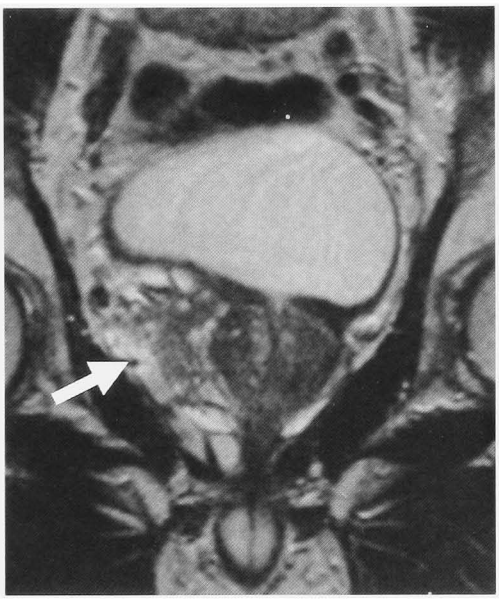
DISCUSSION

Prostatic ductal adenocarcinoma was initially reported in 1976 by Melicow and Patcher[1)], and accounts for between 0.4% and 0.8% of prostatic adenocarcinomas[2)] Ductal adenocarcinomas arise mostly in the periurethral prostatic ducts in and around the verumontanum, causing either obstructive symptoms or hematuria[3)] Ductal adenocarcinoma is mostly diagnosed by transurethral resection or urethral biopsy.

Papillary or cribriform adenocarcinoma resembling prostatic ductal carcinoma in the peripheral zone reportedly occurred in 5% (17 of 338) of acinar adenocarcinoma cases. The papillary pattern was



A



B

Fig. 1. T2-weighted magnetic resonance image of the prostate shows an irregular shaped heterogeneous mass (arrow). The prostate is shifted to the left. A: axial, B: coronal.

present in 7 of the 17 cases, the cribriform pattern in 6, and both patterns in 4. However, it coexisted with acinar adenocarcinoma, and the proportion of the tumor showing the papillary and cribriform patterns ranged from 5% to 60%[4].

Of 58 cases diagnosed as ductal adenocarcinoma on needle biopsy, only 3 cases (5%) were reported to have pure papillary pattern[5] Twenty cases of the 58 cases were treated by radical prostatectomy. In 17 cases of the 20 cases, the ductal component was present solely in peripheral zone. A previous study of 15 radical prostatectomies with ductal adenocarcinoma reported that 5 cases of them existed only

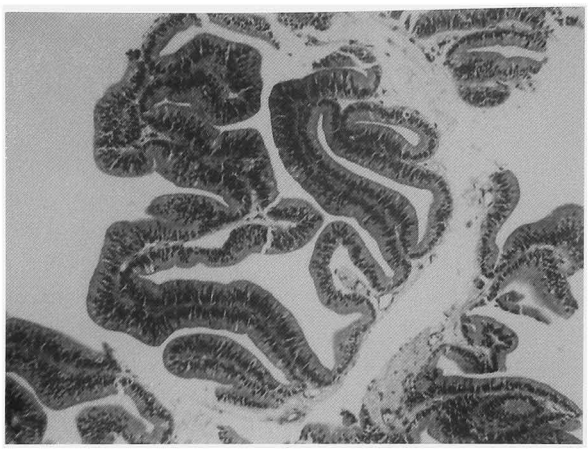


Fig. 2. Histological findings (H & E) of the biopsy specimen suspect papillary adenocarcinoma.

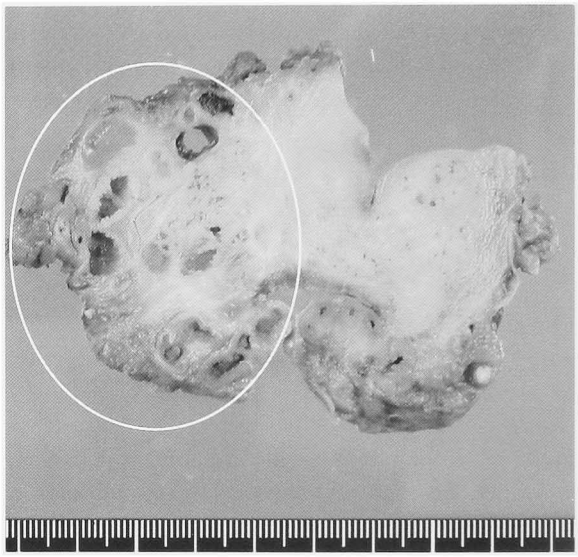


Fig. 3. Macroscopic appearance of the prostatectomy specimen shows that papillary adenocarcinoma exists in the right side (circle). There are non-neoplastic prostatic glands in the left side.

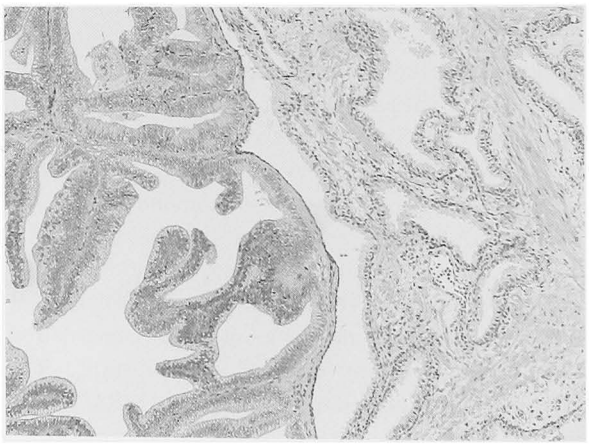


Fig. 4. Histological findings (H & E) show well-differentiated adenocarcinoma of papillary pattern resembling those of prostatic ductal adenocarcinoma at the right side (×100).

in the peripheral zone[6] Brinker et al.[5] reported ductal adenocarcinomas might arise in the periphery of the prostate from peripheral prostatic ducts.

The tumor in our case was a pure papillary adenocarcinoma that resembled ductal carcinoma and arose solely in the peripheral zone, with no transitional zone involvement. The tumor was adjacent to seminal vesicle, but no invasion to the vesicle was detected. This tumor grew laterally, without obstructive symptoms or hematuria. The tumor cells were immunohistochemically positive for PSA. Therefore, it can be considered unique prostatic papillary adenocarcinoma.

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和文抄録

導管型の前立腺癌の1例

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導管型の乳頭状前立腺癌が辺縁領域に発生することはきわめて稀である. 症例は67歳, 男性. 排尿障害 残尿感で近医を受診, PSA 高値にて当科紹介となった. 初診時の PSA 22.6 ng/ml であったが, 前立腺炎の治療を行い症状は改善, PSA も低下した. 約2年間は 7.3 ng/ml から 9.9 ng/ml の間で推移した. その後 PSA が 11.9 ng/ml まで上昇, MRI 経直腸超音波にて前立腺右葉に 4.5×3×3.5 cm ほどの腫瘤を認めた. 前立腺針生検で乳頭状前立腺癌が疑われ, リンパ節腫脹 遠隔転移を認めず, 前立腺全摘術を施行, 病理組織学的に導管型の前立腺癌と診断された.

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Editorial comment

前立腺癌は病理組織学的に通常型と特殊型にわけられる. 大部分の前立腺癌を占める通常型は腺房型の腺癌であり, 約5%を占める特殊型には prostatic duct adenocarcinoma, mucinous adenocarcinoma, signet-ring cell carcinoma, transitional cell carcinoma などが含まれる. この中で今回話題となる prostatic duct adenocarcinoma は1967年に Melicow と Patcher によって前立腺癌の特殊型として "endometrial carcinoma of prostate utricle" という概念で発表された[1] この腫瘍は組織像が子宮内膜の類内膜腺癌とよく似ており, さらに前立腺の前立小室 (utricle) はミュラー管遺残組織と考えられるため, 最初は前立小室から発生するミュラー管由来の腫瘍と考えられ, たいへん注目された. しかし, その後の研究により, 前立小室の上皮も前立腺上皮の性質を有しており, また, この腫瘍も PSA が陽性であることなどが判明してそのミュラー管由来説に代わって前立腺の導管上皮由来と考えられるようになり, 腫瘍の占拠部位も主として前立腺の導管の部分であるところから, prostatic duct adenocarcinoma と呼ばれるようになった.

このように定義された prostatic duct adenocarcinoma は組織像が通常型の前立腺癌にみられる腺房型の腺癌とはかなり異なり, 他臓器に見られる導管由来の癌と似て主として乳頭状あるいは篩 (ふるい) 状の組織像を示すため, 組織学的にひとつの独立した疾患単位として考えやすい特徴を持っている. しかし他方, よく調べるとこの腫瘍はしばしば通常型の前立腺癌成分を同時に伴っており, また逆に前立腺の辺縁領域から発生する通常型の前立腺癌がしばしば一部乳頭状あるいは篩状の組織像の成分を伴っていることも知られており, はやくからその独立性には疑問もあった. また, duct adenocarcinomaの予後に関しては通常型の腺癌とくらべて悪いとする結果とあまり変わらないとする結果など種々の報告があり, 本当に prostatic duct adenocarcinoma は独立した疾患単位かどうかが話題となって来ていた.

1999年に当時 Mayo Clinic に在籍していた前立腺癌の病理の第一人者の一人である David G Bostwick らが "does prostatic duct adenocarcinoma exist?" という論文を, これも病理診断学の最高の権威ある雑誌 American Journal of Surgical Pathology に発表するに及んで, この議論は極に達した感がある[2] 彼等自身の多数症例の詳細な検討によって duct adenocarcinoma は通常型の腺癌の前立腺導管とその周囲への浸潤であり, もし, 前立腺の生検で乳頭状あるいは篩状の組織像をみても通常それは辺縁領域発生の通常型腺癌に由来するものであると結論している.

本号に掲載される S. Yamashita らの論文 "Pure prostatic papillary adenocarcinoma with ductal features"[3] は, 以上のいきさつのもとに書かれた prostatic duct adenocarcinoma の独立した存在に疑問を呈する一例報告である. Prostatic duct adenocarcinoma の名称はいまだに特異な組織像の癌として使われているが, いまのところ Bostwick らの論文に対する決定的な反論もない. 前立腺癌のこれらの異なった組織像と予後との関係については今後詳細な研究が必要であると思われるし, また, その組織発生と分化の方向に関しては将来の分子遺伝学的な研究に期待するところである.

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